

Attachment B. Facility and other Non-R&D Pressure System Certification Process

1. Determine if it is a new design or a major system modification (defined by Ch 17 [GEN-1](#)) of an existing system. If yes, continue; otherwise exit review/certification process.
2. Reference Table FAC-REVIEW below to determine the review requirements based on the type of pressure system.
3. Reference Table FAC-DOCS to determine the required documentation for the reviews. The Code of Record will define the documentation requirements along with ADMIN-1-4, *New System Document Requirements*.
 - a. ADMIN-1-4, *New System Document Requirements*
 - b. ADMIN-1-B31.1-DOCS, *Minimum System Documentation Requirements for B31.1*
 - c. ADMIN-1-B31.3-DOCS, *Minimum System Documentation Requirements for B31.3*
 - d. ADMIN-1-B31.5-DOCS, *Minimum System Documentation Requirements for B31.5*
 - e. ADMIN-1-B31.8-DOCS, *Minimum System Documentation Requirements for B31.8*
 - f. ADMIN-1-B31.9-DOCS, *Minimum System Documentation Requirements for B31.9*

Note: There are code citations for the following for each COR in the documents b–f above:

- a. Documentation
 - b. Owner reviews
 - c. Qualifications
4. Review the appropriate documentation table (a–f of line 3 above) with a PSO to determine what lines are applicable.
 5. In each of the three categories (documentation, owner reviews, and qualification), there is a column titled "How" and "Who"; meaning what is required and who is required to do it.
 6. If the PSO determine the line is applicable to the system he/she enters "Yes" or "Y".

Table FAC-REVIEW New or Modified System Review Requirements

Type of Pressure System	Owner’s Inspector	PSO Review	PSO B Certification Required	CPSO/DCPSO Review	CPSO/DCPSO Certification Required
Under 1000 pound-foot energy level and nontoxic, nonflammable, not oxygen, not corrosive, not steam, not cryogenic, not high temperature, and not LANL-fabricated component Treated as Exempt; verify relief protection	Not Required		No	No	No
High Pressure – Pneumatic	Required		Yes	Required	Yes
Toxics (Category M)	Required		Yes	Required	Yes
High Pressure Steam above 15 psig	Required		Yes	Required	Yes
High Temperature Service	Required		Yes	Required	Yes
High Pressure – Liquid High Volumetric Rate	Required		Yes	Required	Yes

Attachment B. Facility and other Non-R&D Pressure System Certification Process

Type of Pressure System	Owner's Inspector	PSO Review	PSO B Certification Required	CPSO/DCPSO Review	CPSO/DCPSO Certification Required
Brittle Failure Mode (not leak before burst)	Required		Yes	Required	Yes
Pyrophoric	Required		Yes	Required	Yes
Corrosive	Required		Yes	Required	Yes
Oxygen and other Strong Oxidizers	Required		Yes	Required	Yes
Flammables	Required		Yes	No	No
Cryogenic Liquids	Required		Yes	No	No
Natural Gas Distribution/Transmission	Required		Yes	No	No
Compressed Gas > 150 psig	Required		Yes	No	No
Compressed Inert Gases – DOT Cylinders greater than 2 cubic feet	Required		Yes	No	No
Low Pressure Steam 15 psig max	Required	Not Required	No	No	No
Hot Water	Required	Not Required	No	No	No
Steam Condensate	Required	Not Required	No	No	No
Compressed Gas ≤150 psig	Required	Not Required	No	No	No
Compressed Inert Gases – DOT Cylinders less than 2 cubic feet	Required	Not Required	No	No	No
Compressed Inert Gases – Building Systems	Required	Not Required	No	No	No
High Pressure –Low Liquid Volume	Required	Not Required	No	No	No
Refrigeration Systems	Required	Not Required	No	No	No
Hydronic piping	Required	Not Required	No	No	No
Water Systems	Required	Not Required	No	No	No

Table FAC-DOCS Documentation Required for New or Modified Facility and other Non-R&D Systems

Type of Pressure System	All Codes of Record	Additional Code of Record Documentation				
	New System Required Documentation	B31.9	B31.3	B31.1	B31.8	B31.5
SC/SS (ML1/ML2) ¹	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
High Pressure – Pneumatic	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
High Temperature Service	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
Toxics (Category M)	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
High Pressure Steam	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	ADMIN-1- B31.1-DOCS	none	none
High Pressure – Liquid High Volumetric Rate	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
Pyrophoric	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
Corrosive ¹	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
Brittle Failure Mode (not leak before burst)	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
Oxygen and other Strong Oxidizers	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	none	ADMIN-1- B31.3-DOCS	none	none	none
Flammables	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	None	ADMIN-1- B31.3-DOCS	ADMIN-1- B31.1-DOCS	None	None

¹ DOE O 420.1C requires B31.3 for ML1 and ML2

Type of Pressure System	All Codes of Record	Additional Code of Record Documentation				
	New System Required Documentation	B31.9	B31.3	B31.1	B31.8	B31.5
Cryogenic Liquids	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	None	ADMIN-1- B31.3-DOCS	None	None	None
Natural Gas Distribution/Transmission	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	None	None	None	ADMIN-1- B31.8-DOCS	None
Compressed Gas > 150 psig	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	None	ADMIN-1- B31.3-DOCS	None	None	None
Compressed Inert Gases – DOT Cylinders greater than 2 cubic feet	ADMIN 1-4, Owner Inspector Reports, As Build Documentation	None	ADMIN-1- B31.3-DOCS	None	None	None
Low Pressure Steam	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Hot Water	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Steam Condensate	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Compressed Gas ≤150 psig	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Compressed Inert Gases – DOT Cylinders less than 2 cubic feet	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Compressed Inert Gases – Building Systems	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
High Pressure –Low Liquid Volume	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Refrigeration Systems	Owner Inspector Reports, As Build Documentation	None	None	None	None	ADMIN-1- B31.5-DOCS
Hydronic piping	Owner Inspector Reports, As Build Documentation	None	None	None	None	None
Water Systems	Owner Inspector Reports, As Build Documentation	None	None	None	None	None